

**OFFICE OF SOLID WASTE MANAGEMENT
ANNUAL REPORT TO THE THIRTIETH LEGISLATURE
STATE OF HAWAI'I
2019**

PURSUANT TO SECTION 342G-15, HAWAII REVISED STATUTES,
REQUIRING THE OFFICE OF SOLID WASTE MANAGEMENT TO GIVE AN
ANNUAL REPORT ON SOLID WASTE MANAGEMENT

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I. INTRODUCTION

The Office of Solid Waste Management (OSWM) provides an annual report to the Hawai'i State Legislature to describe progress towards meeting the State's waste reduction goals. OSWM is part of the Department of Health's Solid and Hazardous Waste Branch (SHWB) and administers the Deposit Beverage Container (DBC) Program, the Electronic Waste and Television Recycling and Recovery Program, and the Glass Advance Disposal Fee (ADF) Program. These three programs play an instrumental role in achieving the State's waste reduction goals.

II. SOLID WASTE MANAGEMENT PRIORITIES AND PRACTICES

Section 342G-2, Hawai'i Revised Statutes, requires the Department and the counties to consider solid waste management practices and methods in the following order of priority:

- 1) Source Reduction
- 2) Recycling (to include bioconversion)
- 3) Landfilling and/or incineration

The first two practices reduce the amount of waste to be either landfilled or incinerated.

Source Reduction

Source reduction is also called "waste prevention" or "waste reduction" and means creating less waste. Although not included in the list of priorities, "Reuse" means using a product over without first having to reprocess it. The product may be used for its original or intended use or may be used in a different capacity. "Recycling" is the process by which materials are collected and used as "raw" materials to create new products. All these methods are sometimes referred to collectively as "waste diversion."

Because waste reduction avoids creation of waste, it is inherently difficult to quantify. In some cases, comparisons can be made to waste levels before a waste reduction practice was employed to waste levels after. In most cases, an estimate of the amount of waste reduced is all that is possible.

Reuse

Reuse of products or materials is marginally easier to measure than waste reduction because it involves actual material. It can be measured counting the units of a particular product being reused or measuring its tonnage. However, effectively measuring reuse is difficult because it takes place at so many levels and on an unregulated and widespread scale. For example, the reuse of plastic and glass containers for food storage at home or in the workplace. This activity contributes to overall waste reduction, but it is impossible to accurately measure. Some reuse activity is accounted for in the diversion statistics presented in this report; at least two counties gather data on the amounts of material that is donated to non-profit organizations such as the Salvation Army or Goodwill Industries.

Recycling

Recycling is the most easily quantified activity of the waste diversion trio for at least two reasons. First, like reuse, it involves actual material that can be measured. Second, data from recycling facilities are regularly collected by the state and counties.

Diversion

Diversion refers to the combination of reuse and recycling activities. It does not include landfilling, incineration, or waste to energy processes. The diversion rates presented below are based on data collected by the counties. The current diversion rate is composed primarily of recycling activity and a small amount of reuse activity.

The United States Environmental Protection Agency's (EPA) most recent data indicate a national recycling rate of 34.3% for 2013. The State's goal of 50% waste diversion was set in 1991 and mirrored EPA's national recycling goal at the time of 50% by 2000. Since then, the EPA had revised the goal down to 35% recycling by 2005; and, currently, discontinued the use of a stated national recycling goal.

Hawai'i's commercial recyclers contend with long standing challenges which include high land values (which translate to high land lease or rental costs) and high shipping costs. Recycling markets for nearly all the state's recyclable material are out of state. Most recyclables are shipped to either the mainland U.S. or Asia. Recyclers will ship their material to the market paying the best prices at the time. Volatility in recycled materials markets is an issue that all recyclers deal with regardless of location. Hawai'i's recyclers are, however, especially affected by market fluctuations because of thinner profit margins resulting from high shipping costs.

Table 1: Solid Waste Diversion for FY 2018 (Tons)

County	Generation	Recycling	Disposal	Recycling Rate	Incineration
Hawai'i	278,654	54,458	224,196	19.5%	
Maui	268,188	49,357	218,830	18.4%	
Honolulu	1,634,076	340,622	1,293,454*	20.8%	728,885*
Kaua'i	215,171	123,354	91,817	57.3%	
State	2,396,089	567,792	1,828,297*	23.7%	728,885*

Notes:

Data are sourced primarily from permitted solid waste management facility reports and is incomplete where indicated.

Differences in recycling rates from those published by the counties are attributed to different data collection processes and differences in the classification of recycling and landfill diversion activities.

*"Incineration" tonnage is also included as a part of "Disposal" tonnage.

Table 2: Solid Waste Diversion Rates for FY 2014 through FY 2018

County	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Hawai'i	24.7%	26.7%	50.5%	22.9%	19.5%
Maui*	Incomplete	14.4%	30.8%	30.6%	18.4%
Honolulu	40.3%	48.4%	28.7%	28.1%	20.8%
Kaua'i	42.4%	44.9%	55.5%	54.2%	57.3%
State	36.8%	43.0%	32.8%	30.0%	23.7%

Notes:

*Incomplete Data

III. OFFICE OF SOLID WASTE MANAGEMENT ACTIVITIES

Deposit Beverage Container Program

The State of Hawai'i Deposit Beverage Container Program (DBC Program) achieved an annual redemption rate of 66.6% for FY 2018, accounting for a total of over 625 million containers recycled during the Fiscal Year.

Program Redemption Rate

The DBC Program's redemption rate is a measure of program's effectiveness to: (1) collect and redeem eligible deposit beverage containers; and (2) recycle deposit beverage container materials.

The redemption rate is calculated by dividing the number of DBC redeemed by the number of DBC sold.

FY 2018 Redemption Rate: $\frac{625,600,320 \text{ (Redeemed)}}{939,636,923 \text{ (Sold)}} = 66.6\%$

Table 3: DBC FY 2018 Revenue & Expenditures

Revenue	
Distributor Payments	\$56,817,263.99
State Investment Pool Account	\$356,571.10
Other Revenue	\$1,966.75
Total Revenue	\$57,175,801.84
Expenditures	
Redemption Center Reimbursements	\$49,362,645.00
County Recycling Program Support	\$490,574.65
Other Contracts	\$0.00
Program Administrative Costs	
Payroll & Fringe	\$638,072.57
Supplies & Operating Costs	\$59,613.95
Travel	\$9,242.85
Subtotal	\$706,929.37
Other Miscellaneous Expenditures	\$0.00
Total Expenditures	\$50,560,149.02

Electronic Waste and Television Recycling and Recovery Program

The Electronic Waste Recycling Act was adopted in 2008 and created a recycling program for waste computers, portable computers, computer monitors and computer printers. Products covered by this portion of statute are considered “Covered Electronic Devices” (CEDs). The Electronic Waste and Television Recycling and Recovery Act was adopted in 2009 and expanded the program to cover televisions. Products covered under the expanded portion of the law are termed “Covered Televisions” (CTVs). The dual program is administered by OSWM.

The law requires manufacturers to register with DOH and submit recycling plans to the Department. The plans describe how each manufacturer intends to collect and recycle used CED and CTV products. Table 4 indicates the number of manufacturers registered with the Department by calendar year.

Table 4: Number of Registered Manufacturers

Calendar Year	2014	2015	2016	2017	2018
CED	58	62	64	63	63
CTV	27	27	24	19	21

Manufacturer Ranking by Pounds Recycled in 2017

By January 1, 2010, CED manufacturers were required to have their recycling programs established for Hawai'i and by January 1, 2011, CTV manufacturers were required to have their recycling programs established.

By law, the Department is required to rank CED manufacturers by the number of pounds they recycled. Due to the time it takes to conduct electronics collections, recycle materials, tabulate, and report to the Department, rankings are presented on a one-year lag. Table 5 displays the ranking for the manufacturers who reported recycling CEDs in Hawai'i. There were 30 CED manufacturers who reported recycling zero pounds of CEDs in Hawai'i and are listed alphabetically in Table 6.

Table 5: Manufacturer Ranking by CED Pounds Recycled in 2017

Rank	Manufacturer	CED Pounds Recycled
1	Apple Inc.	530,283
2	HP Inc.	331,173
3	Samsung Electronics America, Inc.	119,943
4	Dell Marketing LP	102,143
5	Acer America Corporation	30,007
6	Lenovo (United States) Inc.	19,827
7	LG Electronics USA, Inc.	9,158
8	Brother International Corporation	5,942
9	VIZIO, Inc.	5,000
10	Best Buy	4,591
11	Lexmark International, Inc.	4,495
12	Funai (includes Funai Corp. Inc. & P&F USA, Inc.)	4,200
13	VTech Electronics North America LLC	2,895
14	Elo Touch Solutions, Inc.	2,880
15	DPI, Inc	1,999
16	Mattel, Inc.	1,592
17	Amazon.com Services, Inc.	1,400
18	Canon USA	1,200
19	Cellco Partnership	1,128
20	Oki Data Americas, Inc.	1,000
20	Panasonic Corporation of North America	1,000
20	PLR IP Holdings, LLC	1,000
20	TGCS	1,000
24	Toshiba America Information Systems, Inc.	800
24	TCT Mobile, Inc.	800
26	Venturer Electronics Inc.	600
26	NOOK Digital LLC	600
26	Sharp Electronics	600
26	ASUS Computer International	600
26	HTC America, Inc.	600
31	Motorola Solutions	567
32	Aleph Objects, Inc.	500
33	Huawei Device USA, Inc.	400
33	Envision Peripherals, Inc.	400
33	KYOCERA Document Solutions America, Inc.	400
33	Trans Cosmos America, Inc.	400
33	Wacom Technology Corporation	400
38	Planar Systems, Inc.	362
39	SMART Technologies	295
40	Epson America, Inc.	118
41	Yifang USA Inc.	86
42	Igaming Enterprises LLC	24
Total Pounds Recycled in 2017		1,192,408

Table 6: CED Manufacturers Reporting Zero Pounds Recycled in 2017

Manufacturer	CED Pounds Recycled
BenQ America Corp.	0
Cyberpower Inc.	0
Fujitsu America Inc.	0
Google Inc.	0
IBM Corporation	0
Intel Corporation	0
Konica Minolta Business Solutions U.S.A., Inc.	0
Microsoft Corporation	0
Nvidia Corporation	0
Oracle America Inc.	0
Proexpress Distributor LLC	0
Ricoh USA, Inc.	0
Sceptre, Inc.	0
Sony Electronics Inc.	0
Stratasys, Inc.	0
TMAX Digital Inc.	0
TongFang Global	0
USA111 Inc.	0
ViewSonic Corporation	0
Xerox Corporation	0

In 2017 CED and CTV manufacturers reported recycling 1,192,408 pounds of CEDs and 2,299,611 pounds of CTVs (Table 7).

Table 7: E-Waste Recycled from 2013 through 2017 (Pounds)

Calendar Year	2013	2014	2015	2016	2017
CED Manufacturers	2,363,542	2,290,087	1,906,384	1,780,235	1,192,408
CTV Manufacturers	1,775,816	1,945,189	2,269,664	1,661,062	2,299,611
Total	4,139,358	4,235,276	4,176,009	3,441,297	3,492,019

Registered CED manufacturers are required to pay an annual registration fee of \$5,000 while registered CTV manufacturers are required to pay an annual registration fee of \$2,500. Any manufacturer that sells both CEDs and CTVs are required to pay a combined \$7,500 in annual registration fees. Table 8 indicates program revenue from manufacturer registration fees.

Table 8: Electronic Device Recycling Fund Revenue

Calendar Year	2014	2015	2016	2017	2018
Revenue	\$345,000	\$367,500	\$380,000	\$362,500	\$367,500

Electronics Recycling Program Concerns and Challenges

Convenience and Effectiveness of Manufacturer Recycling Programs

In an attempt to strike a balance between rigid mandates and unlimited flexibility, the law gives manufacturers considerable leeway in the types of recycling programs they offer

consumers. The law requires each manufacturer to submit a recycling plan that describes collection and recycling procedures to the Department annually. While the law requires the Department to review each plan, it does not provide any criteria or performance standards by which to evaluate the plans. This allows some manufacturers to implement inconvenient programs that require consumers to do much of the work to recycle their used electronic devices or televisions. The Department is concerned that inconvenient programs discourage consumers and limit recycling. Some examples of inconvenient programs include:

- Mail-back programs that require customers to package electronics and televisions for mailing. This is impractical for large items like televisions, especially if consumers are required to supply their own boxes/packaging.
- Drop-off programs with inadequate statewide coverage. Statewide coverage in many of the recycling plans is limited or nonexistent.

Evidence from other states' electronic recycling programs suggests that mail-back programs result in minimal amounts of material being recycled, while programs with generous take-back requirements and convenient hours are the most successful.

Lessons Learned / Moving Forward

Counties have made diversion of electronic waste from landfilling (or incineration) a high priority and had developed programs prior to adoption of the state law. However, most of the collection programs have been drastically scaled back or eliminated because of budget constraints.

New electronics recycling services for the general public have become available in response to the law. The most comprehensive programs have been centered on O'ahu with recyclers accepting all brands of electronics free of charge and even accepting items not covered by the law. Comprehensive services are centered on O'ahu because of its population concentration. Various manufacturers also pay the shipping costs for electronics collected through neighbor island county collections that are maintained with the assistance of State funding. The Department is in its second year of providing funding to Hawai'i, Maui and Kaua'i counties to maintain these programs. All neighbor island programs provide periodic collections of electronic waste.

While it is clear that the collection and recycling of electronic waste is the responsibility of CED and CTV manufacturers under the intent of the law, the Department has determined that the short term need to divert these materials from disposal is of primary importance.

Since passage of the law it has become clear that statutory mandates for both minimum recycling goals and customer convenience are necessary to foster a more effective and convenient statewide electronics recycling system. Some manufacturers put no effort into establishing useful recycling programs, as evidenced by the reporting of zero pounds of recycled material. While other manufacturers, who choose to implement O'ahu centric programs have demonstrated that they will not extend comprehensive services to the neighbor islands.

The Department will continue to work with the legislature to strengthen the program with respect to consistency of service provided across the state, convenience of the recycling programs, long term stability of the programs, and the setting of recycling goals.

Glass Advance Disposal Fee (ADF) Program

OSWM continues to administer a statewide glass recovery program that is funded by an advance disposal fee (ADF). The Department collects the fee from importers of products contained in glass containers (that are not deposit beverage containers). The Department then contracts with each county to operate local glass recovery programs to divert glass from the waste stream for recycling.

As directed by statute (HRS §342G-84) the funds are distributed to the counties based on de facto population. Each county is allowed the flexibility to structure its glass-recycling program to maximize recycling of the glass. Program revenue and expenditures are indicated in Tables 9 and 10 respectively.

Table 9: Glass ADF Revenue

Calendar Year*	2014	2015	2016	2017	2018
Revenue	\$800,614	\$851,937	\$795,188	\$772,991	\$748,684

Note:

*Revenue collection was switched to a calendar year basis in 2014.

Table 10: Expenditures for County Glass Collection Programs

County	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Hawai'i	\$70,000	\$128,000	\$85,200	\$0	\$110,171
Maui	\$67,700	\$111,060	\$83,000	\$99,100	\$109,390
Honolulu	\$340,400	\$547,965	\$413,900	\$489,100	\$535,360
Kaua'i	\$48,824	\$53,200	\$0*	\$0	\$0
State	\$526,924	\$840,225	\$582,100	\$588,200	\$754,921

Notes:

*The contract with the County of Kaua'i was discontinued in FY 2016 because its glass recycling program failed to meet statutory requirements.

Table 11: County Recycled Glass (Tons)

County	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Hawai'i	548	878	294	0	617
Maui	971	1,080	553	745	547
Honolulu	1,649	4,824	5,029	5,220	4,859
Kaua'i	408	587	0*	0	0
State	3,576	7,369	5,876	5,965	6,023

Notes:

*The contract with the County of Kaua'i was discontinued in FY 2016 because its glass recycling program failed to meet statutory requirements.

IV. SOLID WASTE MANAGEMENT PROGRAM FUNDING

The Solid Waste Management Disposal Surcharge (Surcharge) is the primary funding source for the OSWM and a single position in the Solid Waste Section (SWS).

The Department collects the Surcharge from the owners/operators of disposal facilities within the State. This includes all municipal solid waste and construction and demolition landfills, as well as the H-POWER waste-to-energy incinerator on O'ahu.

Table 12: Solid Waste Disposal Surcharge Collections

Fiscal Year	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Collections	\$323,894	\$465,865	\$430,884	\$664,391	\$413,102

Table 13: Solid Waste Disposal Surcharge Expenditures

Fiscal Year	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Expenditures	\$663,952	\$680,165	\$652,659	\$282,810	\$375,185